



NEVADA'S INJURY DATA **SURVEILLANCE PROJECT**

AN OVERVIEW OF INJURIES IN **NEVADA**

Bureau of Family Health Services
Judith M. Wright, Bureau Chief

Kenneth Guinn, Governor
Michael Willden, Director
Department of Human Resources

Bureau of Health Planning and Statistics
Emil DeJan, Bureau Chief

Yvonne Sylva, Administrator
Bradford Lee, M.D.
State Health Officer
State Health Division

**AN ANALYSIS OF THE INJURY SURVEILLANCE
DATA SYSTEM IN NEVADA**

SEPTEMBER 2003

Written, compiled and edited by:

**RESEARCH APPLICATIONS, INC.
3102 Walnut Street
Harrisburg, PA 17109
(717) 649-1386**

SPECIAL THANKS TO
(in alphabetical order)

Kelly Arnig
Nevada Department of Transportation

Joseph Greenway
Center for Health Information Analysis

Christina Gilliland
Biostatistician (Ryvis Contractor)
Center for Health Data and Research
Nevada State Health Division

Jean Gunter
Vital Statistics
Bureau of Health Planning and Statistics
Nevada State Health Division

Cynthia Huth, MSN, CNM
Bureau of Family Health Services
Nevada State Health Division

Tim Pollard
Center for Health Data and Research
Nevada State Health Division

Kristen S. Rivas, M.S., E.d., L.A.D.C.
Bureau of Family Health Services
Nevada State Health Division

Maryanne Segurson
Biostatistician (Ryvis Contractor)
Center for Health Data and Research
Nevada State Health Division

Brian Wellins, B.A.
Biostatistician II
Center for Health Data and Research
Nevada State Health Division

Wei Yang, Ph.D.
State Biostatistician and Director
Center for Health Data and Research
Nevada State Health Division

Note from the Authors: This Data Surveillance Project is intended to be an overview of the problem of injury in Nevada as represented in available data sources. The Nevada State Health Division encourages those whose programmatic activities require information on a level more detailed than was included here to write to Injury Prevention Coordinator, 505 E. King Street, Room #200 Carson City, Nevada 89701 with questions or comments.

AN OVERVIEW OF INJURIES IN NEVADA

EXECUTIVE SUMMARY	6
INTRODUCTION	8
DATA FOR INJURY PREVENTION	10
The UB-92 Hospital (Inpatient) Discharge Data	10
The Nevada Death Certificate Database	10
The Nevada Safety Management System	11
Behavioral Risk Factor Surveillance System	11
Youth Risk Behavior Survey	11
INJURIES IN NEVADA	12
Overview of Nevada's population	12
Overview of injury deaths	13
Who Was Injured in Nevada in 2001?	16
What Caused Injuries in 2001?	20
What Types of Injuries Happened in 2001?	26
What Behaviors Are Associated With Injuries?	27
What Are the Consequences and Costs of Injury in Nevada in 2001?	35
DEFINITIONS AND TECHNICAL NOTES	37

EXECUTIVE SUMMARY

The goal of the Nevada Injury Prevention Program is to reduce injuries, disabilities and deaths due to injuries in Nevada. Successfully controlling injuries requires information to guide our educational, preventive and treatment efforts. This critical information includes information about where and when injuries occur, the causes of injury, who is at highest risk, how injuries are inflicted, what behaviors are associated with injury, the outcomes of injury, the most effective approaches for reducing injuries, and the most effective medical treatments for those injuries that do occur. This report provides a brief overview of injuries that occurred in Nevada during 2001. Key topics discussed in the report include:

Injury Deaths

- ❑ Over 1,400 people died from injuries in Nevada during 2001
- ❑ In Nevada, the most common ways in which people sustained injuries which resulted in death were:
 - suicide (408 cases)
 - firearms (365)
 - motor vehicle crashes (330)
 - poisoning/overdoses (326)

Unintentional Injuries

- ❑ Unintentional injuries were the leading cause of death in Nevada for all age categories from 5 through 44

Intentional Injuries

- ❑ While most injuries were accidental, 408 people died from suicide in Nevada in 2001
 - At 20.4 per 100,000, Nevada has the highest suicide rate (20.4/100,000) in the US
 - 80% of the people who committed suicide in Nevada in 2001 were males.
 - 21% of high school age survey respondents reported that they had considered suicide in the previous 12 months and 11% had made a suicide attempt
- ❑ Homicide accounted for nearly 190 deaths in the state during 2001

Motor Vehicle Crash Injuries

- ❑ In 2001, 330 individuals died in Nevada as a result of motor vehicle crashes
- ❑ 23 died as pedestrians hit by motor vehicles
- ❑ 29,368 people were injured in motor vehicle crashes reported to the Nevada Department of Transportation
- ❑ More than 1,900 people had injuries that were classified on crash reports as major or fatal injuries
- ❑ The National Highway Traffic Safety Administration estimated that seat belt use in 2000 prevented approximately 11,900 fatalities (and could have prevented an additional 9,200 if they had been used by everyone)
 - Overall, 77% of Nevada respondents indicated they always wear a seat belt
 - Only 37% of middle and high school students reported always wearing a seat belt

Firearm Injuries

- ❑ Nevada's data shows that 112 persons died of assaults by firearms
- ❑ An additional 234 died of self-inflicted firearm injuries
- ❑ 19 died in accidents or undetermined incidents

Falls

- ❑ In Nevada, falls are the second leading cause of injury-related deaths among people over age 65
- ❑ Hip fractures are a common result of falls in this age group and are among the most frequent reasons for injury-related hospitalizations for this age group.

INTRODUCTION

The National Committee for Injury Prevention and Control (NCIPC) defines an *injury* as: “Any intentional or unintentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, or chemical energy or from the absence of such essentials as heat or oxygen.”¹ Falls, motor vehicle collisions, bicycle crashes, poisonings, drowning and fire are generally unintentional causes of injuries. Intentional causes include suicide, homicide, and assault.

In 2000, more than 148,000 people in the United States died from injuries. Unintentional injuries were the leading cause of death in the U.S. for children, teenagers and young adults through age 34.² In all age groups combined, unintentional injuries accounted for 97,800 deaths in 2000. Intentional injuries (homicides and suicides) ranked second and third as causes of death in the 15-24 and 25-35 age ranges and accounted for approximately 50,000 additional deaths.³ Injuries account for about 2.6 million hospital discharges each year, or about 8 percent of all hospital discharges.⁴ Injuries also are responsible for 37 million Emergency Department visits nationally each year, or about 37% of Emergency Department volume.⁵

Because injuries so heavily impact the young, they result in more years of potential life lost than any other cause – the National Center for Health Statistics estimates than over 11 million years of potential life were lost due to the injuries that occurred during 1999.⁶

Injury is a public health problem that can be controlled, to an extent, like many other public health problems such as infectious diseases, cancer, heart disease or outbreaks of food poisoning. *Injury control* involves preventing injuries as well as minimizing the negative consequences of injuries that do occur. Injury control goes beyond injury prevention to encompass emergency medical, services, acute care treatment and rehabilitation.

The Nevada Injury Prevention Program is a program within the Nevada State Health Division that is responsible for injury surveillance and injury control activities in Nevada. The goals of the Nevada Injury Prevention Program are to reduce injuries, disabilities and deaths due to intentional and unintentional injuries by helping Nevada residents remain:

- ❑ Safe at home from injuries resulting from fires, falls, poisonings, drowning accidents, child abuse, and domestic violence.
- ❑ Safe on the streets and highways from injuries caused by motor vehicle, bicycle, and motorcycle crashes as well as injuries sustained by pedestrians.
- ❑ Safe at school from injuries sustained on the playground, while playing sports, and as a result of youth violence.

- ❑ Safe at work from injuries related to environmental hazards, equipment, and working conditions.
- ❑ Safe in the community from intentional injuries such as self-inflicted injury and assault, and from unintentional injuries caused by falls, fires, and drowning in public places.
- ❑ Safety in the community also involves prompt and appropriate responses from emergency medical systems, emergency operators and dispatchers, poison control centers, and trauma care systems when injuries do occur.

Controlling injuries, however, requires knowledge about where and when injuries occur, what the causes of injury are, who is most vulnerable or at highest risk of injury, how injuries are inflicted, what behaviors are associated with injury, the outcomes of injury, the most effective approaches for reducing the frequency and severity of injuries, and the most effective medical treatments for those injuries that do occur. This knowledge is gained through *injury surveillance*, which can be defined as “the ongoing capacity for tracking and monitoring the incidence, causes, and circumstances of fatal and nonfatal injuries...”⁷ Disseminating the information gained through injury surveillance can be quite helpful in preventing injuries and in planning the medical services needed to treat those injuries that do occur.

In order to improve injury surveillance in Nevada, the Nevada State Health Division is conducting the Data Surveillance Project to assess injury occurrences and injury data in Nevada. This current report (along with a companion report which evaluates the system of injury surveillance databases in Nevada and provides recommendations for continued improvements to that system) is a key product of that project. It presents a brief overview of injuries that occurred in Nevada during 2001. It is based on the analysis of data from several sources that provide a picture of where, when, to whom and how injuries occur and some of the consequences of injuries in Nevada.

Public health workers, planners, government officials, medical personnel, educators and individuals can use this data to guide injury control efforts in Nevada in a variety of ways, for example:

- ❑ Identifying the mechanisms of injury that result in the greatest numbers and/or the most severe injuries can help public health workers prioritize educational and preventive efforts.
- ❑ Identifying specific groups of people (e.g., specific age ranges, genders, occupations) who are at highest risk for a given mechanism of injury can help target their educational and preventive efforts most effectively.
- ❑ Looking at differences in injury rates and severity between those who use certain protective devices (e.g., seat belts, bicycle helmets) and those who do not in order to encourage the implementation of laws and regulations relating to product manufacture and use.
- ❑ Looking at the volume, severity and geographic distribution of injuries in order to guide planning for trauma centers, ambulance services and other medical services.

DATA FOR INJURY PREVENTION

For this Data Surveillance Report, injury data was collected from the following sources. For more information on these databases, contact the NSHD's Bureau of Health Planning and Statistics at <http://health2k.state.nv.us>.

THE UB-92 HOSPITAL (INPATIENT) DISCHARGE DATA

The Nevada UB-92 Hospital Discharge Database is a database of information about people discharged from non-federal acute care hospitals in Nevada. (Military hospitals, Veteran's Administration facilities and other hospitals operated by the federal government and hospitals that only provide specialty care are not included in these data; however, the data do provide a good picture of most people who were hospitalized in Nevada as a result of injuries.) Nevada is one of 42 states and the District of Columbia that have a statewide hospital discharge data set.⁸ These data are collected in the standard Uniform Billing 92 (UB-92) format and include demographic information, and information on diagnoses, mechanism of injury, diagnostic and operative procedures, hospital charges, discharge destination and hospital length of stay. The data analyzed for this project were for hospital discharges that occurred in 2001. This database has information about 234,659 hospital discharges from Nevada hospitals in 2001.

THE NEVADA DEATH CERTIFICATE DATABASE

This database contains information about individuals who died in Nevada (both Nevada residents and non-residents) and about Nevada residents who died outside of Nevada but whose death was reported to Nevada by the state in which the death occurred. Each record in the data set contains information about: (1) the identity of the individual, (2) the demographic characteristics of the individual (e.g., occupation, education level, age, date of birth, gender, age at death, county and state of residence), (3) the circumstances of death (e.g., date and time of death, place of death, manner of death), (4) the death certificate itself (e.g., where filed, individual who provided the death certificate information, etc.), and (5) the cause of death (e.g., ICD10 codes, ICD10 groupings, and place of injury). The 2001 database had 17,477 death records. Among these records, 96% (16,826 records) were for deaths that occurred in Nevada (regardless of residency) and 93% (16,234 records) were for Nevada residents (regardless of state of death). For injury surveillance purposes, the analysis of these data was limited to the records for deaths that occurred in Nevada (regardless of residency).

THE NEVADA SAFETY MANAGEMENT SYSTEM

The Nevada Safety Management System is a database of motor vehicle crash information maintained by the Nevada Department of Transportation (NDOT). This database is compiled from information from police or driver reports of motor vehicle crashes that occur on public roads and highways in Nevada. These crash reports are submitted to NDOT by police agencies throughout Nevada. All motor vehicle crashes resulting in either any bodily injury or property damage of \$250 or more are reportable. The data include information about the date, time and location of the crash, the vehicles involved, level of injury, contributing factors, safety equipment and type of crash. If the crash is a property damage only collision, a small amount of information is collected about the driver(s) involved such as alcohol use, state of residence and gender. For injury crashes, additional person-specific information such as safety belt usage, age, gender and seat position are also collected. The data analyzed for this project were for 59,035 reported crashes that occurred in Nevada in 2001.

BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

Nevada participates in the National Behavioral Health Risk Survey (NBHRS) conducted by telephone interviews. This survey contains a core set of questions concerning health status, access to health care, health awareness, use of preventive services and health knowledge and attitudes. These data are weighted to adjust for calculating age-specific and other characteristic percentages. Data are only available at a statewide summary level, but formulas can be used to make calculations for smaller geographic units such as counties.

YOUTH RISK BEHAVIOR SURVEY

Nevada participates in a Youth Risk Behavior Survey (YRBS). This survey is a self-administered questionnaire filled out by middle and high school students during a single class period. This survey contains a core set of questions concerning behaviors that can affect health such as use of alcohol and tobacco, sexual activity, use of seat belts and violence. These data are also weighted to adjust for calculating age-specific and other characteristic percentages.

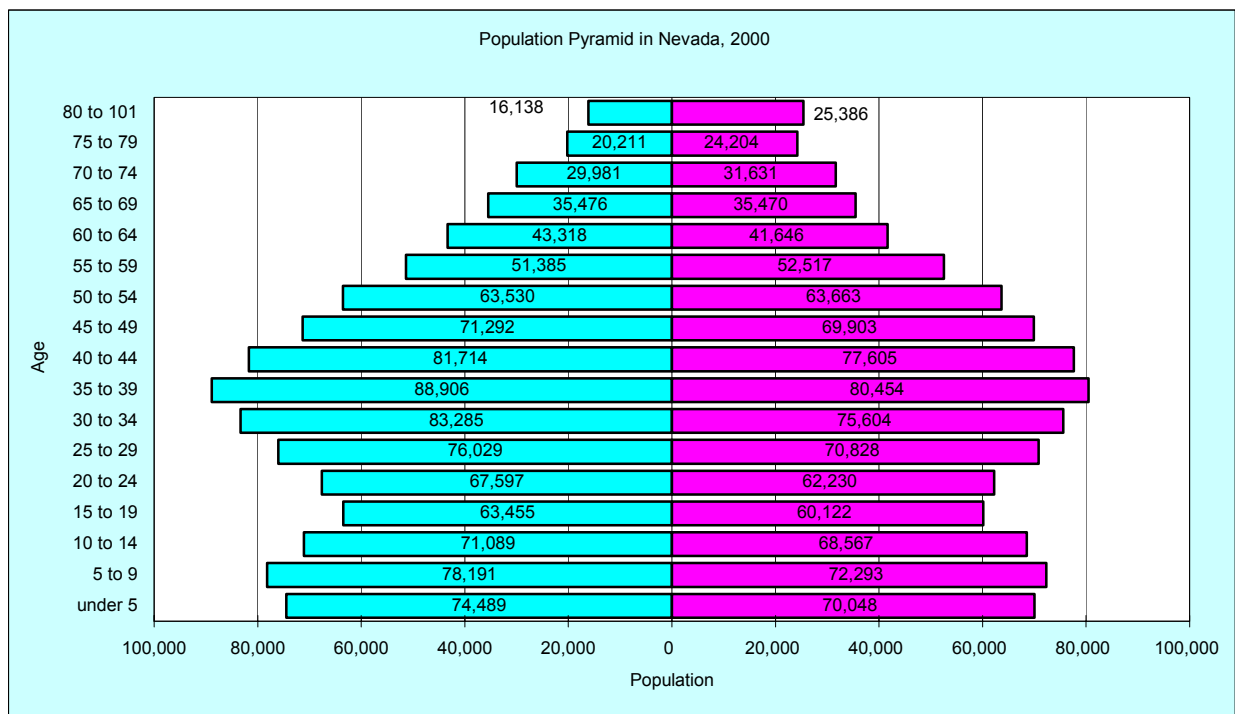
Note: The data currently available provides an incomplete picture of injury in Nevada. For example, there is no complete statewide source of data about emergency medical services (ambulances services) provided in Nevada, hospital emergency department services or domestic violence shelters. In addition, there are gaps, missing data and other limitations to the available injury data. The injury information presented in this report is drawn from the sources described above. Each of the sources used in this report have been carefully evaluated in terms of completeness, accuracy, reliability and validity. Only those data that have been judged to provide reliable and accurate information about injury on a statewide basis are included. Continuing efforts are underway to gain access to new sources of information about injury in Nevada and to improve the quality of existing injury data systems.

INJURIES IN NEVADA

AN OVERVIEW OF NEVADA'S POPULATION

Nevada's population growth from 1990 to 2000 was the fastest in the nation, and Las Vegas was the fastest growing metropolitan area in both Nevada and in the nation. The 1990 Nevada population of 1,236,130 grew by over 64% to 2,034,050 in 2000 and is projected to surpass 2,750,000 by 2005. The vast majority of growth has been by in-migration. The Las Vegas and Reno metropolitan areas contain more than four out of every five (86%) of the state's residents.⁹ Figure 1 depicts the 2000 Nevada population by age group.

Figure 1 Nevada Population for 2000 by Age Category



OVERVIEW OF INJURY DEATHS

Nationally, unintentional injuries were the leading cause of death in the U.S. for children, teenagers and young adults through age 34.¹⁰ Intentional injuries (homicides and suicides) also caused high number of deaths, ranking second and third for deaths in the 15-24 and 25-35 age ranges. Injuries had a similarly high ranking as a cause of death in Nevada. Unintentional injuries were the leading cause of death in all age categories from 5 through 44. Table 1, on the following page, displays the leading causes of death in Nevada. Unintentional and intentional injuries are shaded for ease of reference.

Table 1 Leading Causes of Deaths Occurring in Nevada 2001 by Age Category

Total Deaths = 16,826 including 8 deaths of unknown age

<1		1 to 4		5 to 9		10 to 14		15 to 24		25 to 34	
Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths
All Others	145	All Others	17	Unintentional Injuries	9	Unintentional Injuries	11	Unintentional Injuries	99	Unintentional Injuries	109
Unintentional Injuries	13	Unintentional Injuries	9	All Others	9	All Others	5	Assault (Homicide/Legal Intervention)	56	All Others	65
Influenza and Pneumonia	6	Assault (Homicide/Legal Intervention)	6	Malignant Neoplasms (Cancer)	6	Suicide	4	Suicide	38	Suicide	55
Assault (Homicide/Legal Intervention)	5	Malignant Neoplasms (Cancer)	3	Assault (Homicide/Legal Intervention)	2	Malignant Neoplasms (Cancer)	3	All Others	28	Assault (Homicide/Legal Intervention)	46
Septicemia	5	Septicemia	2	Heart Disease	1	Assault (Homicide/Legal Intervention)	1	Heart Disease	9	Heart Disease	41
Cerebrovascular Disease (Stroke)	3	Heart Disease	1	Nephritis, Nephrotic Synd, Nephrosis	1	Cerebrovascular Disease (Stroke)	1	Malignant Neoplasms (Cancer)	8	Malignant Neoplasms (Cancer)	24
Chronic Lower Respiratory Disease	1	Nephritis, Nephrotic Synd, Nephrosis	1	Alzheimer's Disease	0	Chronic Lower Respiratory Disease	1	Cerebrovascular Disease (Stroke)	5	Diabetes Mellitus	7
Heart Disease	1	Alzheimer's Disease	0	Atherosclerosis	0	Alzheimer's Disease	0	Chronic Lower Respiratory Disease	2	HIV	6
Malignant Neoplasms (Cancer)	1	Atherosclerosis	0	Cerebrovascular Disease (Stroke)	0	Atherosclerosis	0	Septicemia	2	Cerebrovascular Disease (Stroke)	4
Nephritis, Nephrotic Synd, Nephrosis	1	Cerebrovascular Disease (Stroke)	0	Chronic Liver Dis./ Cirrhosis	0	Chronic Liver Dis./ Cirrhosis	0	Diabetes Mellitus	1	Chronic Liver Dis./ Cirrhosis	4
Alzheimer's Disease	0	Chronic Liver Dis./ Cirrhosis	0	Chronic Lower Respiratory Disease	0	Diabetes Mellitus	0	HIV	1	Septicemia	4
Atherosclerosis	0	Chronic Lower Respiratory Disease	0	Diabetes Mellitus	0	Heart Disease	0	Influenza and Pneumonia	1	Chronic Lower Respiratory Disease	3
Chronic Liver Dis./ Cirrhosis	0	Diabetes Mellitus	0	HIV	0	HIV	0	Nephritis, Nephrotic Synd, Nephrosis	1	Influenza and Pneumonia	3
Diabetes Mellitus	0	HIV	0	Influenza and Pneumonia	0	Influenza and Pneumonia	0	Alzheimer's Disease	0	Nephritis, Nephrotic Synd, Nephrosis	3
HIV	0	Influenza and Pneumonia	0	Suicide	0	Nephritis, Nephrotic Synd, Nephrosis	0	Atherosclerosis	0	Alzheimer's Disease	0
Suicide	0	Suicide	0	Septicemia	0	Septicemia	0	Chronic Liver Dis./ Cirrhosis	0	Atherosclerosis	0

Table 1 Leading Causes of Deaths Occurring in Nevada 2001 by Age Category (cont.)

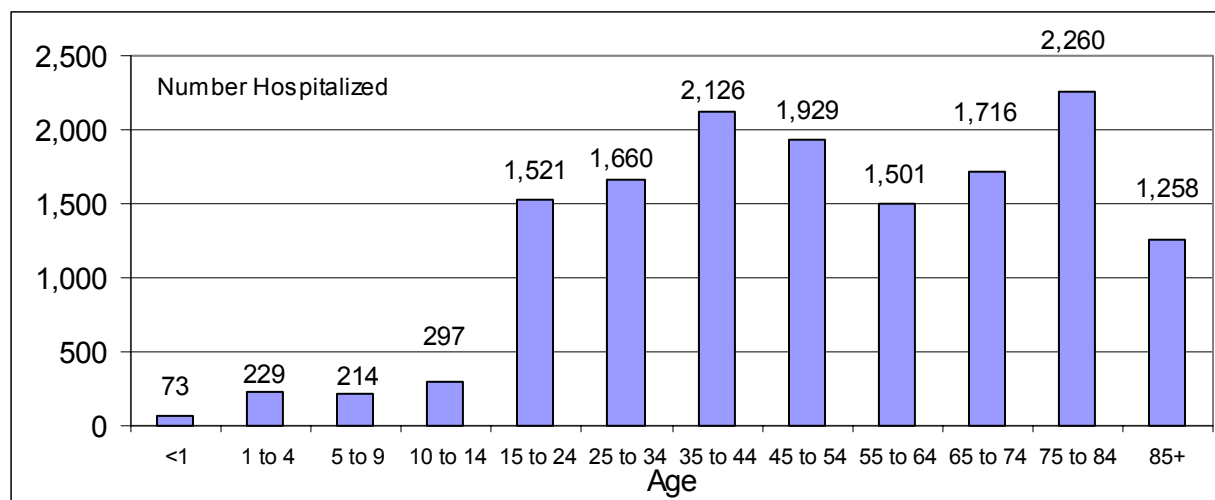
35 to 44		45 to 54		55 to 64		65 to 74		75 to 84		85+	
Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths
Unintentional Injuries	159	Heart Disease	364	Malig Neoplasm (Cancer)	707	Malig Neoplasm (Cancer)	1,087	Heart Disease	1,432	Heart Disease	994
Heart Disease	133	Malig Neoplasm (Cancer)	326	Heart Disease	653	Heart Disease	1,060	Malig Neoplasm (Cancer)	1,134	All Others	617
All Others	124	All Others	226	All Others	249	All Others	486	All Others	677	Malig Neoplasm (Cancer)	373
Malig Neoplasm (Cancer)	99	Unintentional Injuries	141	Chronic Lower Respiratory Disease	128	Chronic Lower Respiratory Disease	334	Chronic Lower Respiratory Disease	463	Cerebrovascular Disease (Stroke)	231
Suicide	87	Suicide	90	Cerebrovascular Disease (Stroke)	107	Cerebrovascular Disease (Stroke)	206	Cerebrovascular Disease (Stroke)	341	Chronic Lower Respiratory Disease	183
Chronic Liver Dis./ Cirrhosis	42	Chronic Liver Dis./ Cirrhosis	88	Chronic Liver Dis./ Cirrhosis	73	Nephritis, Nephrotic Synd, Nephrosis	109	Nephritis, Nephrotic Synd, Nephrosis	145	Influenza and Pneumonia	121
Assault (Homicide/Legal Intervention)	38	Cerebrovascular Disease (Stroke)	49	Unintentional Injuries	67	Septicemia	86	Septicemia	133	Alzheimer's Disease	102
HIV	32	Diabetes Mellitus	35	Diabetes Mellitus	63	Diabetes Mellitus	76	Influenza and Pneumonia	116	Septicemia	84
Cerebrovascular Disease (Stroke)	30	Chronic Lower Respiratory Disease	29	Suicide	60	Influenza and Pneumonia	74	Diabetes Mellitus	98	Nephritis, Nephrotic Synd, Nephrosis	64
Diabetes Mellitus	11	Septicemia	24	Septicemia	54	Unintentional Injuries	68	Alzheimer's Disease	91	Unintentional Injuries	49
Septicemia	10	Assault (Homicide/Legal Intervention)	18	Nephritis, Nephrotic Synd, Nephrosis	48	Chronic Liver Dis./ Cirrhosis	62	Unintentional Injuries	67	Diabetes Mellitus	36
Chronic Lower Respiratory Disease	7	Influenza and Pneumonia	18	Influenza and Pneumonia	29	Suicide	35	Suicide	32	Atherosclerosis	35
Influenza and Pneumonia	7	HIV	17	Assault (Homicide/Legal Intervention)	15	Alzheimer's Disease	17	Atherosclerosis	31	Chronic Liver Disease and Cirrhosis	9
Nephritis, Nephrotic Synd, Nephrosis	7	Nephritis, Nephrotic Synd, Nephrosis	17	HIV	12	Assault (Homicide/Legal Intervention)	8	Chronic Liver Dis./ Cirrhosis	24	Suicide	6
Alzheimer's Disease	0	Atherosclerosis	1	Atherosclerosis	5	Atherosclerosis	8	Assault (Homicide/Legal Intervention)	5	Assault (Homicide/Legal Intervention)	3
Atherosclerosis	0	Alzheimer's Disease	0	Alzheimer's Disease	0	HIV	6	HIV	2	HIV	0

Note: There were an additional 67 injury-related deaths in Nevada classified as undetermined intent. These cases are included in the category of “All Others.”

WHO WAS INJURED IN NEVADA IN 2001?

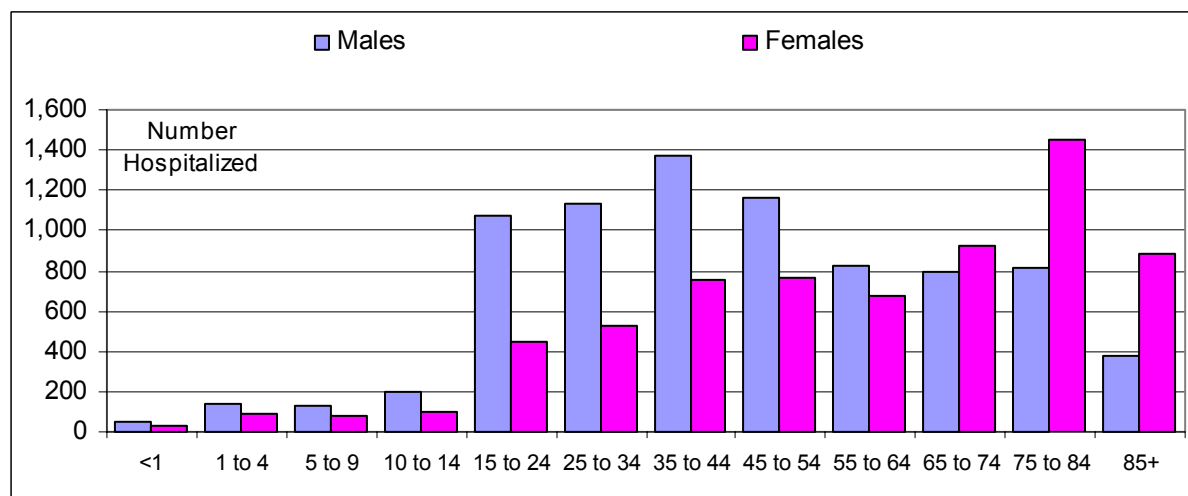
The Nevada Hospital Discharge Data Set provides information about people who were discharged from non-federal acute care hospitals in Nevada. The 2001 discharge data includes records for 234,659 hospitalizations that occurred in 2001. Because some people may be hospitalized more than once during a year, these 234,659 hospitalizations represented 146,915 *people who were hospitalized at least once*. Nearly 8% of all hospitalizations showed at least one injury diagnosis; this resulted in 18,096 hospitalizations involving 14,784 people. Figure 2 depicts the number of people hospitalized in Nevada with at least one injury diagnosis.

Figure 2 People Hospitalized in Nevada With an Injury Diagnosis in 2001 by Age Range



While females made up 61% of all people who were hospitalized in 2001, males made up 54% of those hospitalized with an injury diagnosis. The proportion of males to females hospitalized declines with age, as does the proportion of males to females in the overall population. Figure 3 depicts the number of males and females who were hospitalized with injuries in 2001.

Figure 3 People Hospitalized in Nevada With an Injury Diagnosis in 2001 by Gender



Although there are larger populations of females in the older age groups than males due to mortality differentials, females age 65+ experienced a higher rate per 1,000 residents of hospitalization for an injury than males age 65+ experienced. Despite the higher rate among female residents in the 65+ age groups, male residents have a higher rate per 1,000 residents when all age groups are combined (6.8 per 1,000 for males, 6.1 per 1,000 for females). Table 2 shows the number of Nevada residents hospitalized with an injury at least once during 2001, the 2000 Nevada population and the rate per 1,000 for those hospitalized with an injury diagnosis at least once.

Table 2 Nevada Residents Hospitalized at Least One Time During 2001 with an Injury Diagnosis and Rate per Thousand Residents

Age	Males	Females	Male Population	Female Population	Male Rate per 1,000	Female Rate per 1,000
<1	47	23	13,759	15,322	3.4	1.5
1 to 4	127	82	60,730	54,726	2.1	1.5
5 to 9	117	75	78,191	72,293	1.5	1.0
10 to 14	168	84	71,089	68,567	2.4	1.2
15 to 24	891	381	131,052	122,352	6.8	3.1
25 to 34	945	448	159,314	146,432	5.9	3.1
35 to 44	1,172	673	170,620	158,059	6.9	4.3
45 to 54	974	679	134,822	133,566	7.2	5.1
55 to 64	699	590	94,703	94,163	7.4	6.3
65 to 74	682	798	65,457	67,101	10.4	11.9
75 to 84	715	1,283	30,604	38,896	23.4	33.0
85+	333	827	5,745	10,694	58.0	77.3
Total	6,870	5,943	1,016,086	982,171	6.8	6.1

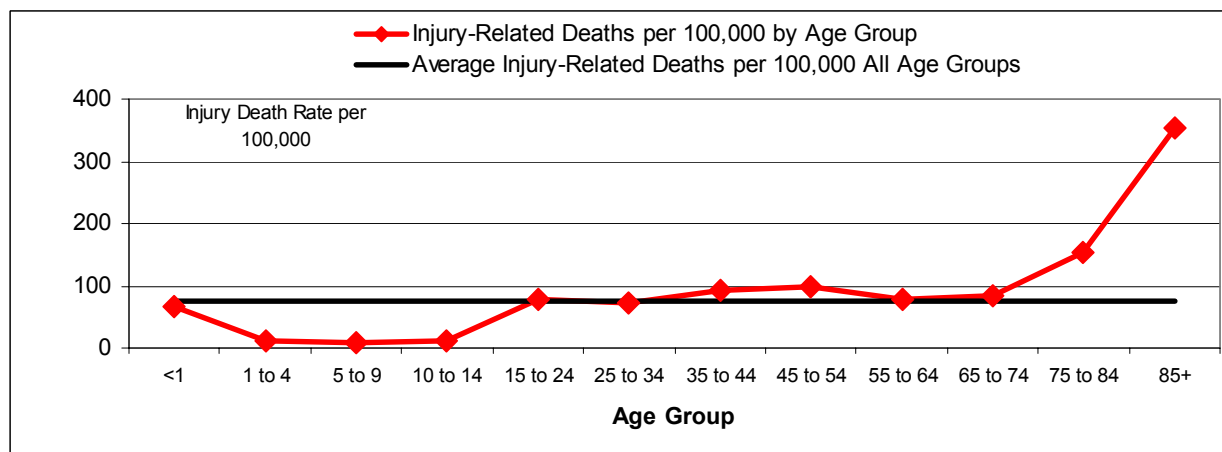
Injury-related deaths are most common among people between the ages of 15 and 64 with the greatest number of injury-related deaths being among those age 35 to 44 as shown in Table 3.

Table 3 Injury-Related Deaths in Nevada 2001 by Age Group

Age Group	Total Deaths	Percent of Total
<1	19	1.3%
1 to 4	15	1.0%
5 to 9	12	0.8%
10 to 14	16	1.1%
15 to 24	199	13.4%
25 to 34	222	15.0%
35 to 44	308	20.8%
45 to 54	262	17.7%
55 to 64	149	10.1%
65 to 74	111	7.5%
75 to 84	106	7.2%
85+	58	3.9%
Unknown Age	5	0.3%
Total	1,482	100.0%

While injury-related deaths are more numerous among those under age 65, the injury-related *death rate per 100,000 residents* increases dramatically among senior citizens. The overall injury-related death rate in Nevada in 2001 was 73.9 deaths per 100,000 residents; however, among those age 65 and older, the injury-related death rate per 100,000 was 125.9 deaths per 100,000 as shown in Figure 4.

Figure 4 Injury-Related Deaths in Nevada 2001 by Age Group



Males are more likely than females to die from injury and about 72% of the injury-related deaths that occurred in Nevada in 2001 were among males. Among all age groups, except among those age 85 and older, there were more injury-related deaths among males than females as shown in Figure 5. The injury-related death rate per 100,000 was higher among males than females in all age groups as shown in Figure 6, on the following page.

Figure 5 Total Injury-Related Deaths in Nevada 2001 by Age Group and Gender

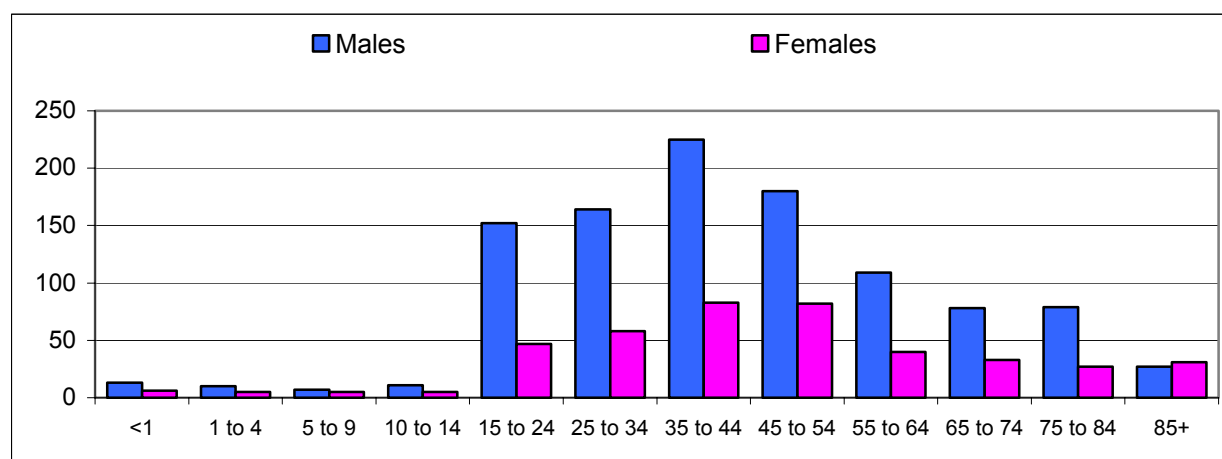
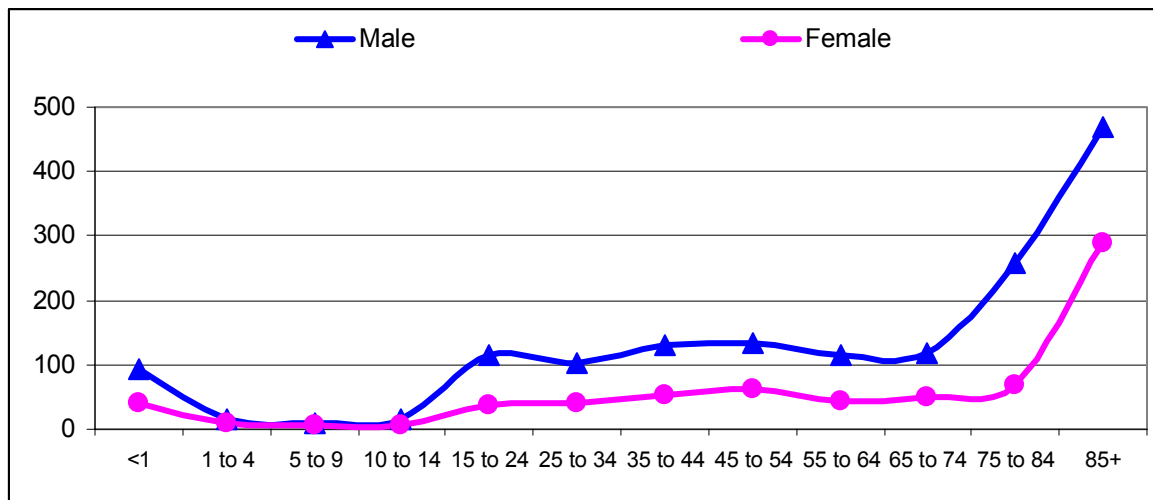


Figure 6 Injury-Related Death Rate per 100,000 in Nevada 2001 by Age Group and Gender



WHAT CAUSED INJURIES IN 2001?

Injuries result from exposure to external energy sources such as the forces generated in a motor vehicle crash or from falling down. Injuries can also result from a lack of elements that are essential for supporting life, such as air, heat, or water. The ways in which people are injured (i.e., the agent, instrument, product or activity that led to the injury) are referred to as “mechanisms of injury.” Mechanisms of injury can be identified in Nevada from death certificates and motor vehicle crash data; the inpatient hospital data did not contain mechanism of injury data in a sufficient number of records to be used for reporting.

Suicide, motor vehicle crashes, poisoning, assaults, and firearm injuries were among the leading causes of injury death in Nevada in 2001. Table 4 presents the most common mechanisms of injury for those killed in Nevada in 2001. The categories in Table 4 are *not* mutually exclusive. For example, if a person dies as a result of a homicide committed by a firearm they would be counted as both a homicide and as a firearm-injury, or if a person committed suicide by poison they would be counted as both a suicide and a poisoning.

Table 4 Most Common Mechanism of Injury Resulting in Deaths in Nevada - 2001
Total Deaths = 1,482

Mechanism	Deaths	Percent
Suicide	408	27.5%
Firearm	365	24.6%
Motor Vehicle Crash	330	22.3%
Poisoning (including overdoses)	326	22.0%
Assault	187	12.6%
Fall	92	6.2%
Other	73	4.9%
Airway	51	3.4%
Drown	30	2.0%
Stabbing	26	1.8%
Pedestrian	23	1.6%
Fire	20	1.3%
Aircraft	11	0.7%
Other Road Vehicle Accident	8	0.5%
Non-Traffic Motor Vehicle Crash	6	0.4%
Water Craft	4	0.3%
Bicycle	2	0.1%

Mechanisms of injury vary by age. Table 5 on the following pages presents the mechanism of injury by age group for injury-related deaths that occurred in Nevada in 2001. Each category in Table 5 is *mutually exclusive*; that is, each death is counted only once.

Table 5 Leading Mechanisms of Injury Among Deaths Occurring in Nevada 2001 Persons Age 0 to 24
(Total Injury-Related Deaths = 1,482 Age was unknown for five deaths)

<1		1 To 4		5 To 9		10 To 14		15 To 24	
Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths
Unintentional Suffocation	9	Homicide by Other Means	5	Unintentional MVC Traffic	3	Unintentional MVC Traffic	8	Unintentional MVC Traffic	68
Homicide by Other Means	5	Unintentional MVC Traffic	3	Drowning	3	Suicide by Poisoning or Overdose	3	Homicide by Firearm	39
Environmental Causes	2	Drowning	2	Fall	1	Fall	1	Suicide by Firearm	24
Other Cause	1	Unintentional Suffocation	2	Other Cause	1	Other Cause	1	Accidental Poisoning or Overdose	18
Drowning	1	Unintentional MVC Non-Traffic	1	Unintentional Fire or Burns	1	Drowning	1	Other Cause	16
Unintentional Fire or Burns	1	Unintentional Fire or Burns	1	Environmental Causes	1	Suicide by Firearm	1	Intentional Suffocation	9
		Homicide by Firearm	1	Homicide by Firearm	1	Homicide by Firearm	1	Homicide by Cutting or Piercing Instrument	9
				Homicide by Other Means	1			Fall	3
								Drowning	3
								Suicide by Poisoning or Overdose	3
								Homicide by Other Means	3
								Unintentional MVC Non-Traffic	2
								Unintentional Fire or Burns	2
TOTAL	19		15		12		16		199

Table 5 (cont.) Leading Mechanisms of Injury Among Deaths Occurring in Nevada 2001 Persons Age 25 and Older

25 To 34		35 To 44		45 To 54		55 To 64		65+	
Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths	Cause	Deaths
Unintentional MVC Traffic	60	Accidental Poisoning or Overdose	87	Accidental Poisoning or Overdose	65	Unintentional MVC Traffic	41	Unintentional MVC Traffic	64
Accidental Poisoning or Overdose	43	Unintentional MVC Traffic	50	Unintentional MVC Traffic	54	Suicide by Firearm	34	Fall	57
Suicide by Firearm	37	Suicide by Firearm	38	Suicide by Firearm	48	Suicide by Poisoning or Overdose	17	Suicide by Firearm	52
Homicide by Firearm	32	Intentional Suffocation	25	Suicide by Poisoning or Overdose	28	Other Cause	12	Other Cause	34
Other Cause	14	Other Cause	23	Other Cause	18	Accidental Poisoning or Overdose	9	Unintentional Suffocation	14
Suicide by Poisoning or Overdose	8	Homicide by Firearm	22	Fall	9	Fall	7	Suicide by Poisoning or Overdose	11
Intentional Suffocation	8	Suicide by Poisoning or Overdose	21	Intentional Suffocation	9	Intentional Suffocation	6	Accidental Poisoning or Overdose	10
Fall	4	Fall	11	Unintentional Suffocation	8	Homicide by Firearm	5	Environmental Causes	6
Homicide by Cutting/Piercing Instrument	4	Homicide by Other Means	9	Homicide by Firearm	6	Homicide by Other Means	5	Intentional Suffocation	6
Unintentional MVC Non-Traffic	3	Drowning	5	Homicide by Other Means	4	Unintentional Fire or Burns	4	Homicide by Firearm	5
Unintentional Fire or Burns	3	Unintentional Suffocation	5	Drowning	3	Unintentional Suffocation	3	Homicide by Other Means	5
Homicide by Other Means	3	Homicide by Cutting/Piercing Instrument	5	Environmental Causes	3	Homicide by Cutting/Piercing Instrument	3	Unintentional MVC Non-Traffic	4
Firearm Unknown Intent	1	Unintentional MVC Non-Traffic	3	Homicide by Cutting or Piercing Instrument	3	Unintentional MVC Non-Traffic	2	Drowning	3
Drowning	1	Environmental Causes	2	Unintentional MVC Non-Traffic	2	Environmental Causes	1	Unintentional Fire or Burns	2
Environmental Causes	1	Firearm Unknown Intent	1	Unintentional Fire or Burns	2			Homicide by Cutting/Piercing Instrument	2
		Unintentional Fire or Burns	1						
TOTAL	222		308		262		149		275

A Focus on Two Mechanisms of Injury

Two of the most common mechanisms of injury – motor vehicle crashes and falls - are examined in more detail below and on the following pages.

Motor Vehicle Crashes

Over 43,300 people died from motor vehicle crashes in 2000, making this the leading mechanism of injury for deaths in the United States.¹¹ The National Highway Transportation Administration (NHTSA) estimated that motor vehicle crashes occurring in 2000 resulted in medical costs of \$32.6 billion, lost workplace productivity costs of \$61 billion and lost household costs of \$20.2 billion¹². Motor vehicle injuries account for 4.2% of emergency department visits nationally.¹³

Motor vehicle crashes are also a leading cause of injury and injury-related deaths in Nevada. In 2001, 330 individuals died in Nevada as a result of motor vehicle crashes (although some of these deaths were from injuries sustained in crashes outside Nevada), 23 died as pedestrians hit by motor vehicles and eight (8) died from other road vehicle accidents. In 2001, 29,368 people were injured in motor vehicle crashes reported to the Nevada Department of Transportation. More than 1,900 people had injuries that were classified on crash reports as major or fatal injuries (see Table 6).

Table 6 Number of People Injured in Motor Vehicle Crashes in Nevada in 2001

	Motor Vehicle Occupants	Pedestrians and Bicyclists	Total
Minor Injuries	20,681	873	21,554
Moderate Injuries	5,305	600	5,905
Major Injuries	1,365	241	1,606
Fatal Injuries	255	48	303
Total	27,606	1,762	29,368

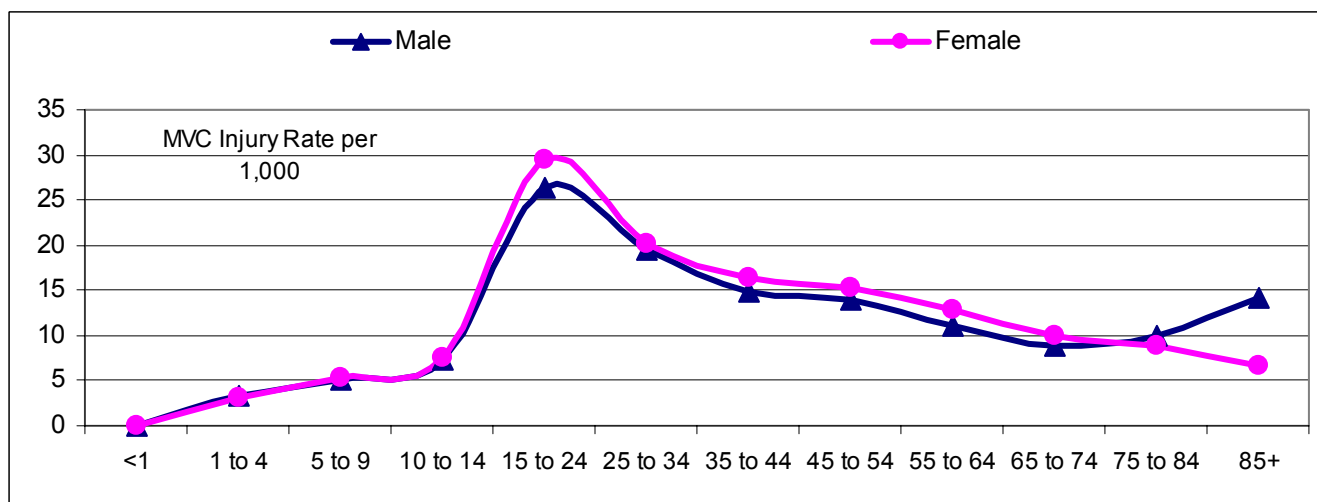
While more males were involved in motor vehicle crashes that resulted in injury, more females were reported to be injured in crashes. Males, on the other hand, were more likely than females to have moderate, major and fatal injuries as shown in Table 7.

Table 7 Reported Injury Severity for People Involved in Injury Crashes by Gender - 2001

	Males	Females	Gender Unknown	Total
No Injury	16,444	10,526	578	27,548
Minor Injury	9,781	11,714	59	21,554
Moderate Injury	3,503	2,384	18	5,905
Major Injury	941	661	4	1,606
Fatal	208	95	0	303
Total	30,877	25,380	659	56,916

The injury rate for motor vehicle crashes is highest among teenagers and young adults and generally declines with age up to about age 75. The rate per 1,000 residents starts to increase again for males age 75 and older as shown in Figure 7.

Figure 7 Motor Vehicle Crash Injury Rate per 1,000 Residents By Age and Gender - 2001



Figures 8 through 10 depict the rate per 100,000 residents for those injured in police-reported motorcycle crashes, pedestrian crashes and bicycle crashes.

Figure 8 Motorcycle Crash Injury Rate per 100,000 Residents By Age - 2001

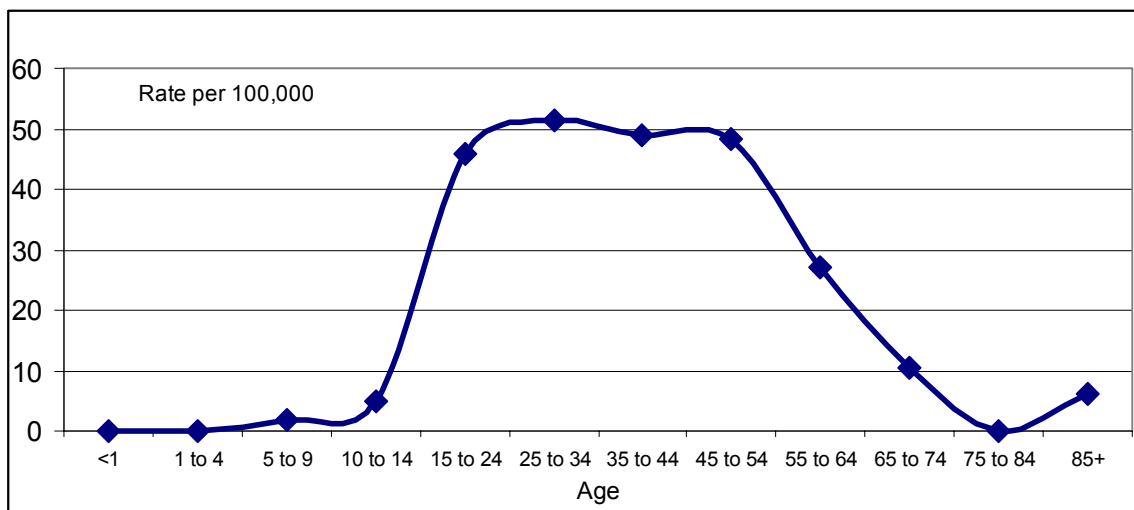


Figure 9 Pedestrian Injury Rate per 100,000 Residents By Age - 2001

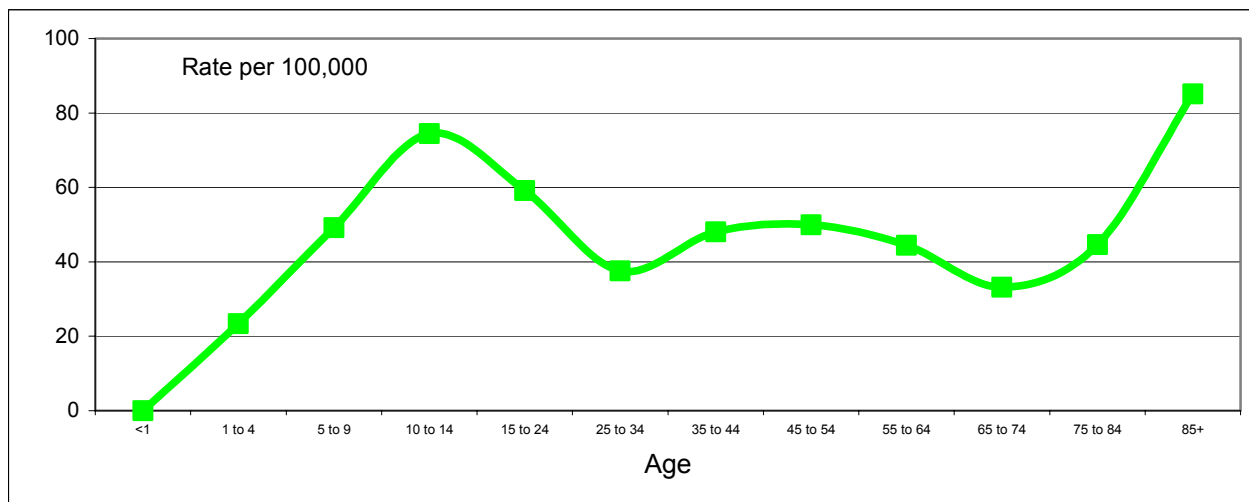
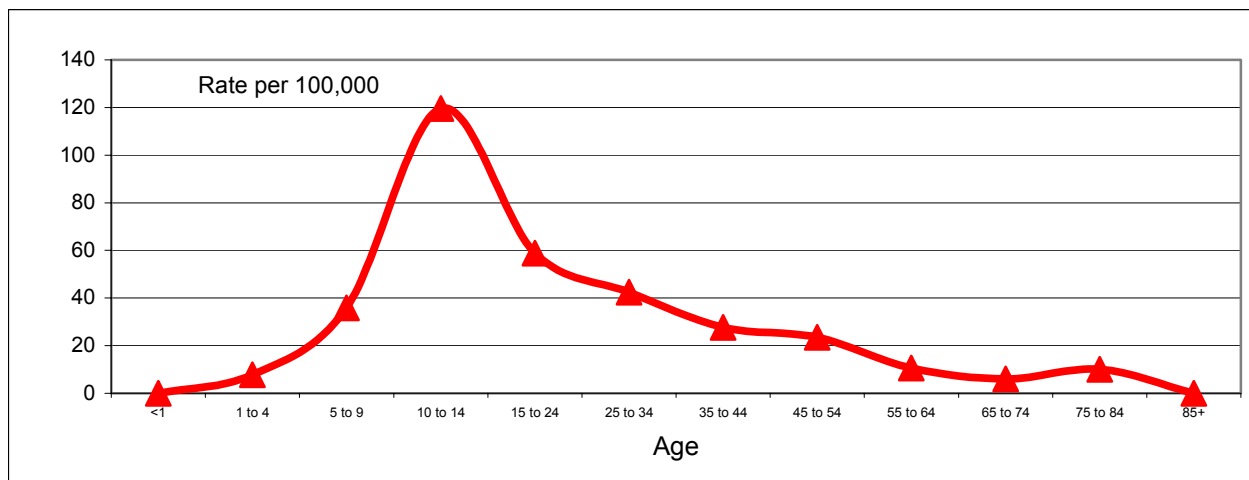


Figure 10 Bicycle/Vehicle Crash Injury Rate per 100,000 Residents By Age - 2001



Many motor vehicle injuries are severe enough to require hospitalization; however, because the Nevada hospital discharge data does not contain complete information on mechanism of injury, the number hospitalized due to motor vehicle injuries in Nevada cannot be reported.

Falls

Nationally, 13,322 died from unintentional falls in 2000.¹⁴ Falls are the leading cause of injury-related deaths among people over age 65, resulting in over 9,000 deaths each year or about 106 deaths per 100,000.¹⁵ In Nevada, falls rank second for this age group, following motor vehicle deaths. Hip fractures are a common result of falls in this age group and are the most frequent injury-related cause for hospitalization (608 cases in 2001).

WHAT TYPES OF INJURIES HAPPENED IN 2001?

Hospital discharge data provide a picture of serious injuries that occurred in Nevada in 2001. As was mentioned above, more than 14,000 people were hospitalized in 2001 with injuries. Certain types of injuries are of particular concern for injury surveillance because they often result in either permanent disability or require a very long time for recovery. For example, each year an estimated 1.5 million Americans survive a traumatic brain injury (TBI) and 50,000 die.¹⁶ Of those who survive, an estimated 80,000 to 90,000 experience onset of a long-term disability.¹⁷ In addition to Traumatic Brain Injuries (TBI), other injuries of particular interest are Spinal Cord Injuries/ vertebral column injuries, hip fractures and fractures of the bones of the legs and feet. Table 8 presents the number of hospitalizations for these types of injuries in Nevada by age group.

Table 8 Hospitalizations for Traumatic Brain Injury, Spinal Cord and Vertebral Injuries, Hip Fractures and Lower Extremity Fractures by Age - 2001

Age	Traumatic Brain Injury	Spinal Cord Injury or Vertebral Injury	Hip Fracture	Lower Extremity Fracture
<1	34	1	1	17
1 to 4	43	3	3	28
5 to 9	41	4	5	37
10 to 14	64	19	7	70
15 to 24	223	234	25	241
25 to 34	151	230	29	308
35 to 44	154	260	54	387
45 to 54	101	215	85	362
55 to 64	63	176	183	259
65 to 74	48	166	367	237
75 to 84	25	224	857	244
85+	22	112	608	111
Total	969	1,644	2,224	2,301

Hospital discharge data also provide an indication of the severity of injuries for which people are hospitalized. Injury severity can be calculated in terms of an Injury Severity Score (ISS) from the diagnostic codes in the data for patients with blunt force, burns and penetrating injuries. Injury Severity Scores are not generally calculated for patients with poisoning or overdoses. Injury Severity Scores range from 0 (least injury) to 75 (injuries that are almost always fatal). Injury experts often consider an ISS of 16 or greater to be a severe injury. In 2001, there were 1,315 hospitalizations for patients with an ISS of 16 or greater as shown in Table 9.

Table 9 Hospitalizations for Patients with Severe Injuries 2001

Injury Severity Score	Hospitalizations
ISS ≥16	1,315
ISS ≥25	398
ISS ≥40	40
ISS=75	15

WHAT BEHAVIORS ARE ASSOCIATED WITH INJURIES?

The risk of injury is greatly increased by certain behaviors such as driving while under the influence of alcohol, not using a seat belt, or keeping a loaded and unlocked firearm in the home. The motor vehicle crash data provides some information about risky driving behaviors. Two especially useful sources for examining risk behavior come from survey results. The Nevada State Health Division and The Nevada Department of Education survey Nevada residents by telephone and in school classroom settings to obtain information about their health status and health-related behaviors. These surveys include questions about injury risk behaviors. One survey, known as the Behavioral Risk Factor Surveillance System Survey (BRFSS) is a nationwide survey developed by the US Centers for Disease Control and Prevention (CDC) and conducted by each state to monitor state-level prevalence of the major behavioral risks among adults associated with premature morbidity and mortality. A second survey, the Youth Risk Behavior Survey (YRBS) is conducted by the Nevada Department of Education. This survey is a self-administered questionnaire conducted during school. The Youth Risk Behavior Survey monitors health-risk behaviors that contribute to the major causes of death, disease, injury, and social problems among adolescents. Injury-related results from the 2000, 2001 and 2002 Nevada Behavioral Risk Factor Surveillance System surveys and the 2001 Nevada Youth Risk Behavior Survey were available for this study.

Alcohol Use

Alcohol use is often involved in injury episodes including motor vehicle crashes, domestic violence, falls and other accidents. The BRFSS survey asks respondents about their consumption of alcohol, the amount of alcohol consumed and whether they have driven a vehicle under the influence of alcohol. Table 10 presents the some of the alcohol-related responses from the 2000, 2001 and 2002 BRFSS surveys.

Table 10 Alcohol Use Among Behavioral Risk Survey Respondents 2000 to 2002

	2000	2001	2002
Number Surveyed	2,102	2,573	3,156
During the past month, have you had at least one drink of any alcoholic beverage such as beer, wine, wine coolers, or liquor? (Percent responding "Yes")	66.2%	63.7%	62.7%
Considering all types of alcoholic beverages, how many times during the past 30 days did you have 5 or more drinks on one occasion? (Percent reporting 1 or more times)	23.0%	17.1%	18.3%
During the past month, how many times have you driven when you've had perhaps too much to drink? (Percent reporting 1 or more times)	5.3%	Not available	3.0%

The Youth Risk Behavior Survey also asks questions about alcohol consumption. Among high school-age respondents to the survey, approximately 80% indicated they had consumed alcohol at least once during their life, approximately 47% indicated they had consumed alcohol within the past 30 days and approximately 31% indicated they had consumed five or more alcoholic drinks on a single occasion in the past 30 days. About 12.5% of high school respondents indicated they had driven while they had been drinking during the past 30 days and about 30% indicated they had ridden in a car with someone who had been drinking in the past 30 days.

In 2001 in the United States, 41% of all traffic fatalities (over 17,000 deaths) were alcohol-related.¹⁸ Nevada's own motor vehicle crash data showed approximately 5% of the collisions indicated either alcohol or drug involvement; however, the National Highway Traffic Safety Administration (NHTSA) acknowledges that alcohol and drug impairment data is generally underreported. NHTSA estimates that up to 50% or more of crashes involving alcohol are not identified. In about 18% of the Nevada collision records driver sobriety was coded as "unknown," "unknown if impaired," "blood alcohol test pending," or "unknown if impaired (drugs)." While the cases that are coded as legally drunk probably do identify those cases in which the driver is, in fact, drunk it should be kept in mind that the alcohol/drug data probably seriously underestimates the extent of alcohol and drug involvement in crashes. Approximately 76% of the 1,429 drivers who were reported to be legally drunk were males, although males made up only about 59% of drivers of crash vehicles.

Failure to Use Safety Equipment

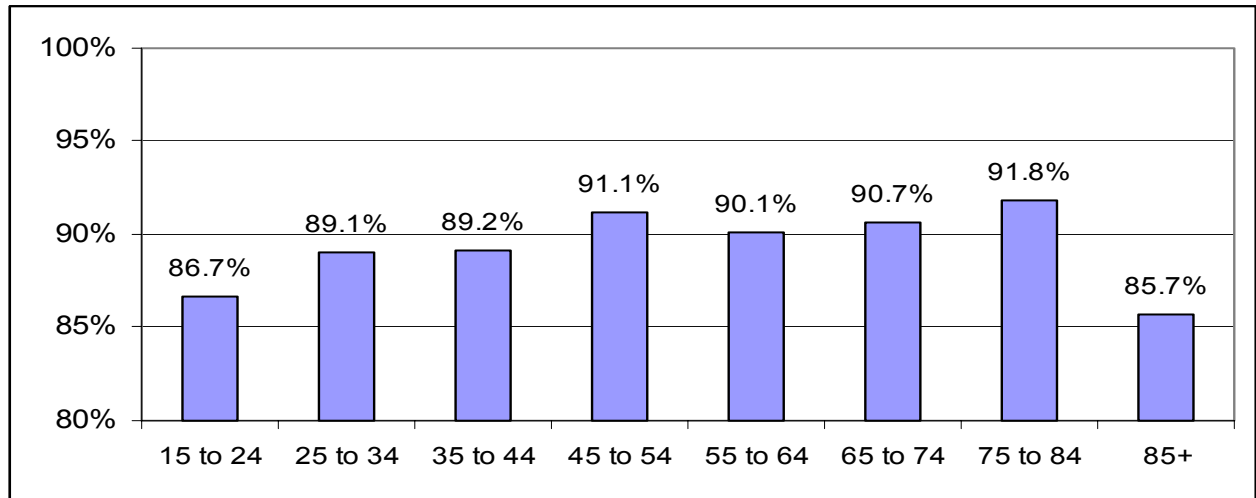
The National Highway Traffic Safety Administration estimated that seat belt use in 2000 prevented approximately 11,900 fatalities (and could have prevented an additional 9,200 if they had been worn by everyone).¹⁹ Seat belts also prevented 325,000 non-fatal injuries.²⁰ The 2002 BRFSS asked respondents about their use of seat belts. Approximately 77% of respondents indicated they always wear a seat belt when riding in a car as shown in Table 11.

Table 11 Reported Seat Belt Usage Among Respondents to the 2002 Behavioral Risk Factor Surveillance Survey

Response	Number	Percentage	Cumulative Percentage
Always	2,424	76.8%	76.8%
Nearly always	406	12.9%	89.7%
Sometimes	145	4.6%	94.3%
Seldom	94	3.0%	97.2%
Never	81	2.6%	99.8%
Do not know/Not sure	1	0.0%	99.8%
Never drive or ride in a car	2	0.1%	99.9%
Refused	3	0.1%	100.0%
Total	3,156	100.0%	

The proportion of people reporting they always or nearly always used seat belts was lowest among teenagers and those age 85 and older as shown in Figure 11.

Figure 11 Reported Always or Nearly Always Using Seat Belts Among Respondents to the 2002 Behavioral Risk Factor Surveillance Survey by Age



The Youth Risk Behavior Survey also asks questions about seat belt usage and showed lower percentages of seat belt usage than the BRFSS (see Table 12).

Table 12 Reported Seat Belt Usage Among Respondents to the 2001 Youth Risk Behavior Survey

Response	Number	Percentage	Cumulative Percentage
Always	535	36.5%	36.5%
Most of the Time	480	32.8%	69.3%
Sometimes	216	14.8%	84.1%
Rarely	160	10.9%	95.0%
Never	73	5.0%	100.0%
Total	1,464	100.0%	

When responding to surveys, individuals may overestimate their use of safety devices. Moreover, categories such as “most of the time” and “sometimes” do not provide truly precise descriptions of use. Another source of seat belt usage data is the Nevada crash data. A look at this data demonstrates large differences in safety belt use between self-reported and police-observed data. Police must often rely on self-reporting of safety belt usage for the crash reports since they arrive at the scene after the crash occurs; however, for insurance and other reasons, people in crashes may say they were wearing a safety belt even if they were not. In the 2001 crash data, about 91% of

individuals involved in injury crashes were reported to be using seat belts, 6% were reported as not using seat belts and information was unknown for the remainder. However, in looking at only occupants with *fatal* injuries (who presumably are less able to lie about their safety belt usage, but who also may be more likely to not be using a safety belt), police reports of safety belt usage drops sharply to about 31%. Still another source of seat belt usage data is data collected as vehicles are observed on the roadways. NHTSA's most recent observational studies show a national use rate of 69%, with a 76% use rate in the Western U.S. and 75% in Nevada. This observational rate of 75% appears reasonable for the overall Nevada population; however, as the differing rates of those responding "always" on the BRFSS (76.8%) versus the YBHRS (36.5%) demonstrate, usage rates vary significantly among various subgroups within the overall population.

Nevada law requires a driver, front or back seat passenger over 5 years old in a vehicle weighing under 6,000 lbs. to wear a safety belt. A child safety seat law and a motorcycle helmet law are also in effect.

Risky Driving Behaviors

As noted earlier, 41% of all traffic fatalities (over 17,000 deaths) were alcohol-related. Other factors also contribute to traffic fatalities and injuries. In the Nevada crash data, one contributing factor is assigned to each collision. Failure to yield, failure to reduce speed and inattentive driving accounted for approximately 53% of all reported contributing factors. Table 13 presents the contributing factors listed in the crash data. (In looking at contributing factors, two things should be kept in mind. First, the crash data only report one contributing factor although crashes might involve multiple contributing factors. Second, there may be a certain amount of subjectivity in the reporting of contributing factors.)

Table 13 Contributing Factors for Reported Collisions in Nevada - 2001

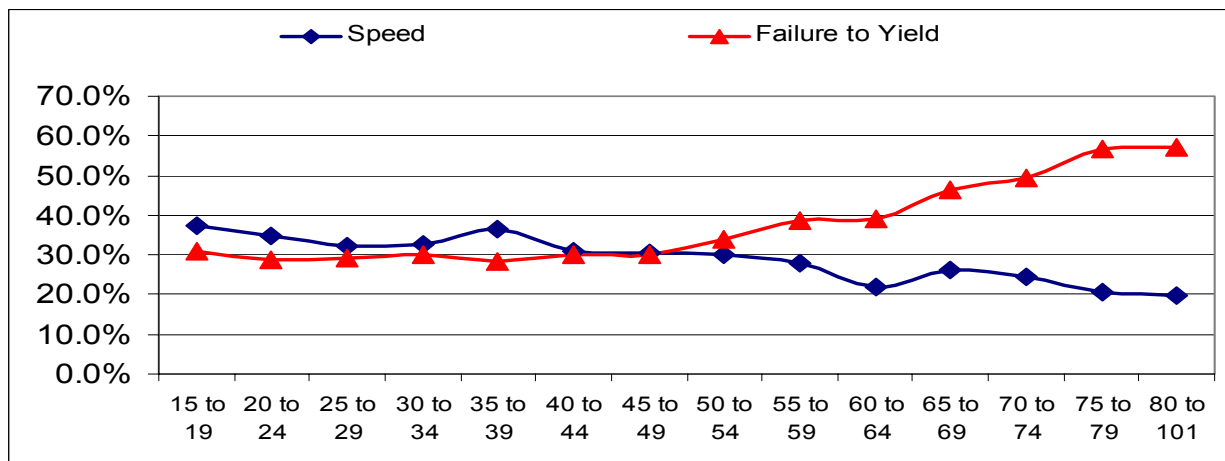
Contributing Factor	Total	Percent of Total
Failure to Yield	13,943	23.6%
Failure to Reduce Speed	11,032	18.7%
Inattentive Driving	6,405	10.8%
Following Too Close	4,780	8.1%
Improper Lane Change	4,390	7.4%
Speed Too Fast for Conditions	3,975	6.7%
Improper Turn	2,709	4.6%
D.U.I. Alcohol	2,442	4.1%
Improper Backing	1,389	2.4%
Excessive Speed	813	1.4%
Non-Contact Vehicle	804	1.4%
Improper Passing	713	1.2%
Pedestrian in Roadway	496	0.8%
Improper Action on Pedacycle	445	0.8%
Driving in Other Than Proper Manner	400	0.7%
Objects in Roadway	366	0.6%

Contributing Factor	Total	Percent of Total
Fatigued Driver	320	0.5%
Animal in Roadway (Deer)	291	0.5%
Improper Start Position	289	0.5%
Defective Tires	286	0.5%
All Others	2,747	4.7%
Total	59,035	100.0%

Contributing factor patterns can also be examined based on selecting only records of drivers identified as being responsible for the crash. Among drivers judged to be responsible for the crash, two contributing factors (speeding and failure to yield) account for more than 65% of all contributing factors reported.

An interesting age-related pattern emerges in looking at these two factors. Speeding appears to be a much more common contributing factor among younger drivers, while failure to yield becomes more common among older drivers (see Figure 12).

Figure 12 Percent of Crash-Responsible Drivers, by Age, Involved in Injury Crashes in with Speeding and Failure to Yield Reported as Contributing Factor - 2001



Assaults/Homicides

Nationally, homicide is the second most frequent cause of death (following unintentional injuries) for young people ages 15-24 and the third most frequent cause for people ages 25-34. In Nevada, the pattern was similar, with homicide ranking second for 15-24 year olds and fourth for 25-34 year olds. Homicide accounted for nearly 190 deaths in the state during 2001. Homicides are most common among teenagers and young adults, but they occur in all age categories. Eleven children between age zero and four were victims of homicide as were eight adults age 75 or older.

The 2001 YRBS asks several questions about physical violence and sexual assault. Table 14 presents the results from the 2001 YRBS survey among high school students.

Table 14 Reported Interpersonal Violence Behavior Among Respondents to the 2001 Youth Risk Behavior Survey

Question	Percent
In physical fight within the past 12 months	32.7%
Carried a weapon (gun, knife or club) in past 30 days?	14.6%
Threatened or injured with a weapon in past 12 months	8.7%
Physically hurt by boyfriend or girlfriend in past 12 months	11.7%
Sexually assaulted ever	9.6%

Suicides

Nationally, suicide ranks as the third most common cause of death among those age 15-24 and the second most common cause among those age 25-34.²¹ Nevada's death certificates show that 408 people died from suicide in 2001, resulting in Nevada having the highest suicide rate (20.4/100,000) in the U.S. Nationwide, the rate was 10.7/100,000 in 2000. Because a victim's intent may be unknown, additional suicides may not be identified and, therefore, may be recorded simply as accidental deaths. The National Center for Health Statistics estimated that over 635,000 years of potential life (before age 65) were lost due to suicides in the U.S. in 1999.²²

In 2001, 80% of Nevada's suicides were male and 20% were female.

While suicides rank higher among the young compared with other causes of death, the rate of suicide is actually greater in older age categories. Figure 13 shows the Nevada suicide rate /100,000 by age category.

Figure 13 Nevada Injury Death Rate for Self-Inflicted Injuries by Age - 2001

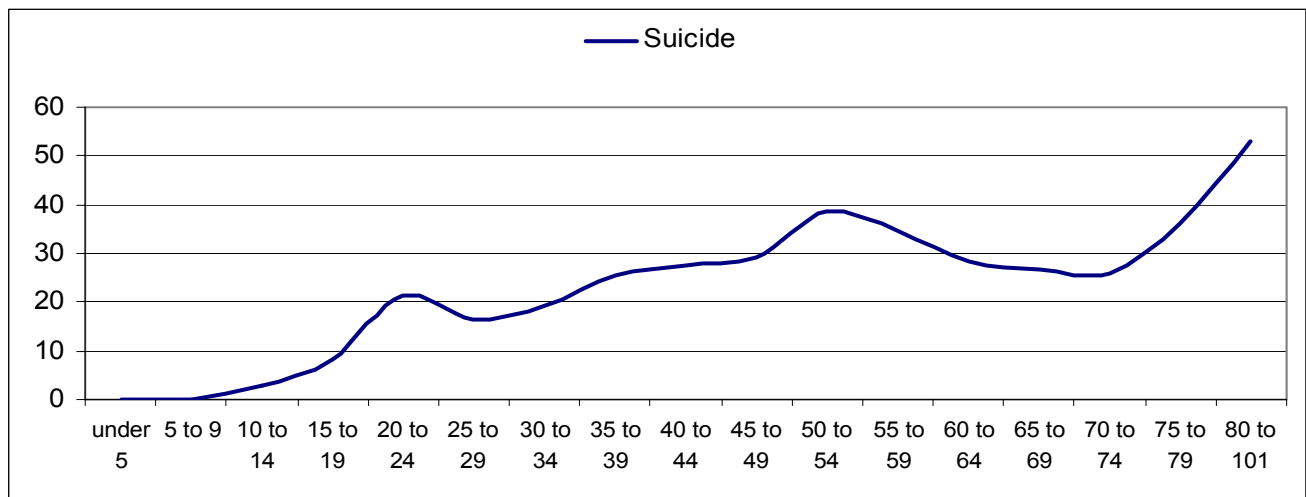


Table 15 presents the percentage of high school age respondents to the YRBS who indicated in the past 12 months whether they had ever considered, planned or attempted suicide or injured themselves in a suicide attempt.

Table 15 Reported Suicide Behavior Among High School Respondents to the 2001 Youth Risk Behavior Survey

	Percentage of Respondents
Considered suicide in past 12 months	21.0%
Planned suicide in past 12 months	17.2%
Attempted suicide in past 12 months	11.0%
Injured in suicide attempt in past 12 months	10.7%

Firearms

Tracking of firearm injuries has traditionally relied upon death certificate data. Nevada's data shows that 112 persons died of assaults by firearms, an additional 234 died of self-inflicted firearm injuries and 19 died in accidents or undetermined incidents, for a total of 365 deaths. Additional cases were hospitalized and still others were treated in emergency departments and released. Because hospital data does not include sufficient information to determine mechanism of injury and because emergency department data is not compiled in a statewide database in Nevada (only 12 states currently have such a database) the number of non-fatal firearm injuries treated in Nevada can only be estimated. National estimates are that 28% of firearm injuries are fatal. If this proportion is applied in Nevada, it can be grossly estimated that 1,300 non-fatal firearm injuries occur each year. Figure 14 displays the crude death rate attributable to firearm-related injuries.

Figure 14 Crude Injury Death Rate per 100,000 for Firearm-Related Injuries by Age - 2001

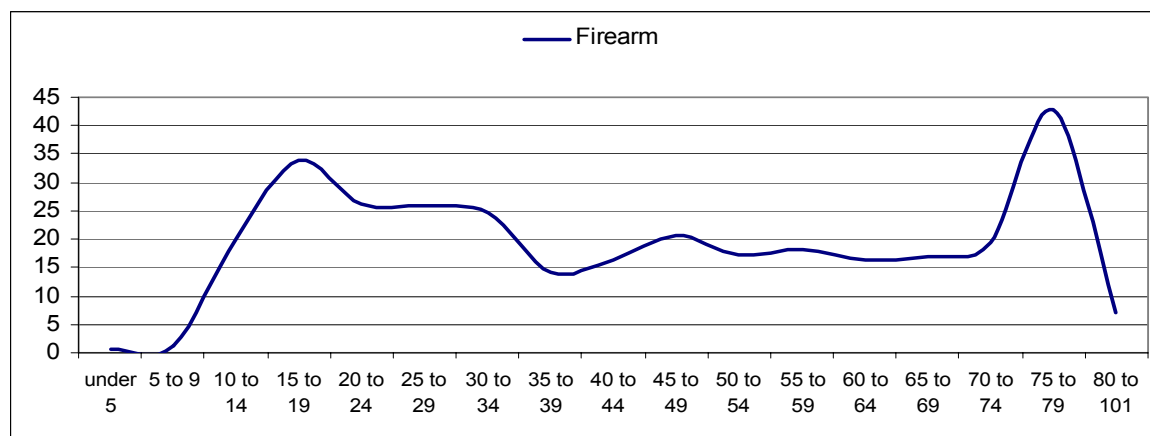
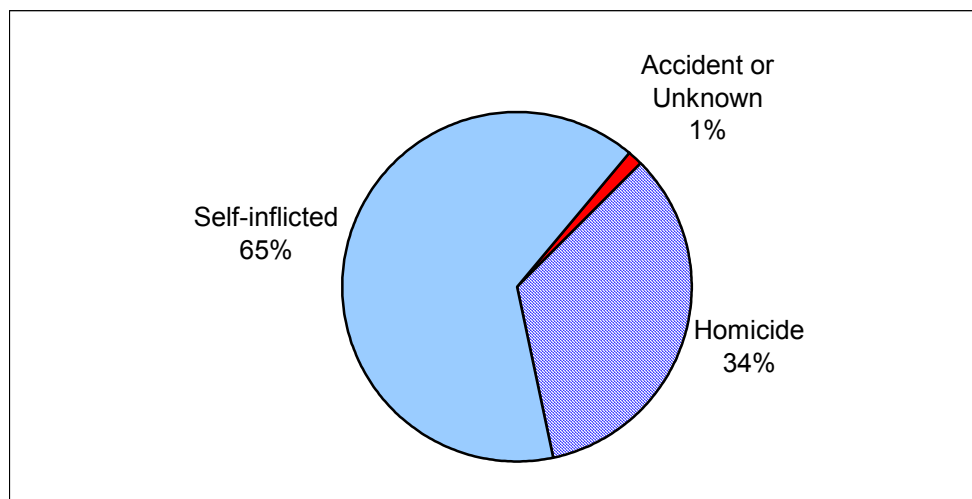


Figure 15 shows the distribution of those firearm-related deaths between self-inflicted deaths, or suicides, and homicides.

Figure 15 Firearm-Related Deaths by Responsible Party - 2001



The 2002 BRFSS asked about the presence of firearms in the home and whether firearms in the home were loaded and or unlocked. Table 16 presents the percentage of respondents to the 2002 BRFSS who indicated they kept a firearm in the home, if the firearm was kept loaded, and if children under the age of 18 lived in the home where a firearm was kept.

Table 16 Reported Firearm Possession in Home Among Respondents to the 2002 Behavioral Risk Factor Surveillance Survey

	Percent of All Respondents	Percent of Respondents with Children Under Age 18 in Home
Firearm kept in home	38.0%	36.0%
Loaded firearm in home	10.7%	7.6%
Loaded and unlocked firearm in home	6.9%	3.6%

WHAT ARE THE CONSEQUENCES AND COSTS OF INJURY IN NEVADA IN 2001?

Throughout this report, the impact of various types and mechanisms of injury has been presented primarily in terms of deaths and hospitalizations. Other consequences of injury are more difficult to measure due to their nature (e.g., the personal impact of pain or disability) or due to the absence of data (e.g., no centralized tracking of outpatient rehabilitation therapy visits/costs or emergency room visits/costs).

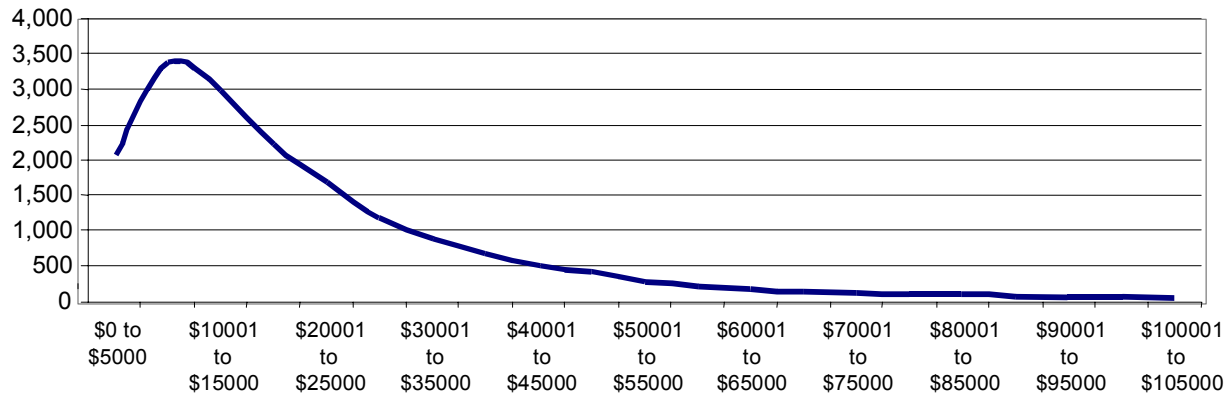
The hospital discharge data provide information about hospital *charges* for patients with injuries. It should be understood that *charges* are not the same as costs or payments. *Costs* cover both the direct cost of providing care (e.g., paying hospital personnel, for medicine, equipment, supplies and room and board) and the indirect costs that come from long-term capital expenditures, general overhead and so forth. Hospitals use complex formulas to calculate a *cost-to-charge* ratio, which is an estimate of the relationship between the hospital charges and what it actually costs to provide the hospital care. Charges are not the same as *payments* either. Charges are simply the hospital's bill for services. In many cases payers negotiate a discount from these charges or pay the hospital using some other method (e.g., a specific amount per hospital day or for a specific type of case). In other instances, the hospital receives no payment for the services it provides.

It should also be understood that not all of the charges incurred during a hospitalization may be attributable to an injury. For example, if a patient had a heart attack while driving and had a motor vehicle crash, some of the care would be for treating the medical consequences of the heart attack and some would be related to treating the injuries incurred in the crash. Hospital charges also do not include costs that may occur outside the inpatient setting such as follow-up doctor visits, ambulatory surgical care or medicines. Nonetheless, hospital charges are a useful way to estimate the direct financial cost of providing hospital care to people who are injured and a useful way to look at changes over time.

Because patients may be treated for non-injury conditions (e.g., diabetes, heart disease) while hospitalized for an injury, it is not always possible to separate out charges, which can be attributed to injury. It is possible, however, to look at the total hospital charges for those whose primary reason for hospitalization was an injury. In 2001, there were 11,893 hospital admissions for patients whose primary reason for hospitalization was an injury.

The average hospital charge for these patients was \$28,844 and the highest charges were more than one million dollars. The total charge for all of these patients was 76.6 million dollars. Figure 16, on the following page, depicts the distribution of hospital charges for patients whose primary reason for admission was an injury.

Figure 16 Distribution of Hospital Charges for Patients with a Principal Diagnosis of Injury 2001



Another way to estimate the cost of injury is by hospital days. The average charge for trauma patients is between \$5,000 and \$6,500 per day. The average length of hospital stay for patients whose primary reason for admission was an injury was 5.3 days and there was a total 62,555 hospital days of care provided to these patients in 2001.

Still another way to look at the consequences of injury is to estimate the years of potential life lost. Years of potential life lost is based on the assumption that most people live to a given average age. Many demographers use age 65, although other ages can be used. The age at which the person dies is then subtracted from 65 to estimate how many years of potential life were lost. In 2001, the average potential years of life lost for injury-related deaths was about 22.0 years per death compared to 3.3 years among non-injury related deaths.

DEFINITIONS AND TECHNICAL NOTES

Age Distribution: The age distribution of Nevada's population varies from the nation as a whole by having a higher share of people in the age groups of 9 and under and between 25 and 74; while having a lower proportion of those 10 to 24 and those 75 and older. However, as an age group, the 75 and older population experienced the greatest change since 1990 with a statewide increase of 108%. This increase was focused in Clark County (130%), followed by all other counties, as a region, and Washoe County with an increase of 84% respectively.

County Comparisons: The population of the counties in Nevada varies widely, from a few thousand in the rural areas such as White Pine and Storey counties to over one million in Clark County. Because of these population differences and small denominators in the rural counties, caution should be used when interpreting the rates in this report and using them for comparison purposes.

Death: A person who has sustained irreversible cessation of all functioning of the brain, including the brain stem, is considered dead (National Center for Health Statistics (NCHS)).

External Cause of Injury Coding (E-codes): External causes of injury and poisoning are a component of an internationally established classification system- the World Health Organization's International Classification of Disease Codes (ICD- 9th revision/ ICD- 10th revision). The diagnostic section of the classification system addresses injury diagnoses, such as fracture, laceration, burn, etc., while the e-code of the injury is used to group the circumstances of an injury or poisoning along two dimensions: intent and mechanism of injury. For example, the nature of an injury might be a cranial fracture, while the cause could be a fall, jump, motor vehicle collision, or sports injury.

Homicide: Injuries inflicted by another person with intent to injure or kill, by any means.

ICD9-CM: The International Classification of Disease Clinical Modification 9 (ICD9-CM) is a standard way of classifying illness, injuries, cause of injuries and medical procedures. It is used by all hospitals in the United States for recording information about illness and injury.

ICD-10: The International Classification of Diseases 10th Edition is the standard way of classifying illnesses and causes of injury on death certificates in the United States.

Injury: Any intentional or unintentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, or chemical energy or from the absence of such essentials as health or oxygen.

Injury Control: Activities designed to prevent injuries as well as minimize the negative consequences of injuries that do occur.

Injury Surveillance: The ongoing capacity for tracking and monitoring the incidence, causes, and circumstances of fatal and nonfatal injuries.

Legal Intervention: Injuries inflicted by the police or other law-enforcing agents, including military on duty, in the course of arresting or attempting to arrest lawbreakers, suppressing disturbances, maintaining order, and other legal actions. Excludes injuries caused by civil insurrections.

Mechanism of Injury: The mechanism of injury identifies the agent, instrument, product or activity that was involved in the series of events that led to the injury. This Data Surveillance Project highlights the mechanisms of injury available for reporting.

Suicide: Intentional, self-inflicted injury resulting in death of the injured individual. In 2001, 80% of suicides were male and 20% were female. The Suicide Prevention Research Center is located at the University of Nevada School of Medicine in Las Vegas.

Years of Potential Life Lost: A method to estimate how many years of life an individual lost due to premature death.

REFERENCES

-
- ¹ National Committee for Injury Prevention and Control (NCIPC).
 - ² National Center for Health Statistics Vital Statistics System, 2000.
 - ³ Ibid.
 - ⁴ Fingerhut LA, Warner M. Injury chartbook, Hyattsville, MD: National Center for Health Statistics, 1997.
 - ⁵ Ibid.
 - ⁶ Ibid.
 - ⁷ State and Territorial Injury Prevention Directors Association. Safe States – 2003 Edition. Atlanta, GA State and Territorial Injury Prevention Directors Association, 2003.
 - ⁸ Report on E-coding Survey. Injury Control and Emergency Health Services Section, American Public Health Association.
 - ⁹ Nevada Vital Statistics Report 2000. Nevada State Health Division (NSHD).
 - ¹⁰ National Center for Health Statistics Vital Statistics System, 2000.
 - ¹¹ Minino, et al. 2002.
 - ¹² National Highway Traffic Safety Administration, NHTSA Notes - Jared Goldberg, Economic impact of motor vehicle crashes, Annals of Emergency Medicine, Oct. 2002.
 - ¹³ Blincoe I.J. Seay, AG., Zalonsnja E, et al. The Economic Impact of Motor Vehicle Crashes 2000. Washington, DC: NHTSA, USDOT; 2002.
 - ¹⁴ Minino, et al. 2002.
 - ¹⁵ Hoyert DL, et al. Deaths: Final Data for 1997. National Vital Statistics Reports; vol. 47 no. 19. Hyattsville, MD; National Center for Health Statistics, 1999.
 - ¹⁶ National Center for Injury Prevention and Control website. Traumatic Brain Injury 2001. CDC, 2001
 - ¹⁷ CDC, 1999.
 - ¹⁸ National Highway Traffic Safety Administration. Traffic Safety Facts 2001: Alcohol. Washington, D.C.2002.
 - ¹⁹ National Highway Traffic Safety Administration, NHTSA Notes - Jared Goldberg, Economic impact of motor vehicle crashes, Annals of Emergency Medicine, Oct. 2002.
 - ²⁰ Ibid.
 - ²¹ National Center for Health Statistics Vital Statistics System, 2000.
 - ²² National Center for Health Statistics Vital Statistics System, 1999.